TOTALDATASCIENCE

PYTHON CRASH® COURSE

Get a solid Python background

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Unique Python Program

Industry Standard Curriculum(Created and Reviewed by industry Python Developers)

Reviewed by IIT and MIT Faculties

FROM BEGINNER TO ADVANCED PYTHON PROFESSIONAL

HANDS-ON Exercises, Assignments, Projects

Comprehensive and Short to easily get stared

Be Confident programming in Python

TECHNOLOGY STACK

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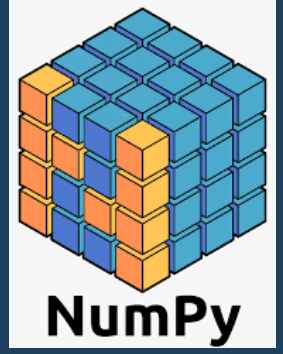

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LESSONS

Introduction To Python

- Introduction to Python.
- Install the necessary softwares.
- Introduction to Anaconda.
- Introduction to Jupyter Notebook.
- Introduction to Google Colab.

Hands-On With Python

- Keywords and Identifiers
- Python Comments.
- Python Docstrings.
- Python Variables.
- Rules and Nmaing conventions.
- Python Input(), Output(), Import() functions.

Python Operators

- Python Arithmetic Operators.
- Python Comparison Operators.
- Python Logical Operators.
- Python Bitwise Operators.
- Python Assignment Operators.
- Python Special Operators.
- Python Membership Operators

Python Flow Control

- If statement
- If...Else statement
- Elif statement
- For Loop
- While Loop
- Break statement
- Continue statement

PYTHON FLOW CONTROL EXERCISES

Python Functions

- User Define Functions.
- Arbitrary Functions.
- Functions with Loops.
- Lambda Functions.
- Built-in Functions.

PYTHON FUNCTION EXERCISES

Python Global & Local Variables

- Python Global Variables
- Python Local Variables

Project Assignments On Each Topic

Working With Files In Python

- Introduction to Python Files.
- The Close method.
- The With statement.
- Writing to a File in Python.

Python Modules

- Introduction to Python Modules.
- Renaming Modules in Python.
- The from...import statement.

Python Packages & Libraries

- Introduction to Python Packages & Libraries
- Python Pip install

Data Types In Python

- Integers in Python
- Floating Point numbers in Python.
- Complex numbers in Python.
- LIST in Python.
- Tuple in Python.
- LIST Mutability.
- Tuple Mutability.
- SET in Python.
- Dictionary in Python.
- Working on LIST.
- LIST Comprehension.

EXERCISES

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LESSONS

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LESSONS

Numpy

- Introduction to Numpy.
- Creating multi-dimensional arrays.
- Numpy Arange function.
- Numpy Zeros(), Ones() and Eye() functions
- Numpy reshape()
- Numpy linspace()
- numpy resize()
- Generating random values with Numpy:
  - random.rand()
  - random.randn()
  - random.randint()
- Numpy Indexing & Slicing.
- Numpy Broadcasting.
- Creating a copy of dataset.
- Dataframe introduction.
- Creating Matrix with Numpy.

NUMPY EXERCISES

Pandas

- Pandas Series.
- Pandas Loc & iLoc.
- Pandas Dataframe.
- Operations on Pandas Dataframe.
- Selection and Indexing in Pandas Dataframe.
- Reading a dataset into Pandas Dataframe.
- How to add columns in Pandas Dataframe.
- How to drop a Column in pandas Dataframe.
- How to Reset Index in Pandas Dataframe.
- How to Rename a Column in Pandas Dataframe.
- Pandas Head() & Tail() function.
- Checking for Missing Values in Pandas.
- Pandas Describe Function.
- Conditional Selection with Pandas.
- How to deal with Null Values in Pandas.
- Sorting Values in Pandas.
- Pandas Groupby()
- Pandas Count() & Value_count()
- Pandas Concatenate() function.
- Pandas Join() & Merge()

Project Assignments On Pandas & Numpy

Data Visualisation Libraries

- Matplotlib
- Seaborn
- Plotly
- Altair
- ggplot

Data Visualisation Project Assignment

Plotting Different Kinds of Visualisations

- Bar graph
  - horizontal bargraphs
  - stacked bar graphs
  - group bar graphs
- Histogram
  - marginal histogram
  - facet histogram
- Distplot
  - bivariate distplot
  - multivariate distplot
- Hexplot
- Scatterplot
- Relplot
- LM plot
- Tree plot
- Pie Chart
- Heat Map
- Scatter Matrix
- Sunburst
- Funnel plot
- Bubble plot
- Box plot
- Violin plot
- Wind Rose plot
- Word Cloud
- Folium plot
- Time Series plot
- 3D plots
- Animated plots

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LESSONS

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LESSONS

Handling & Fixing Errors/Bugs in Python

- Introduction to Error Handling in Python.
- Python Syntax errors.
- How To Properly Read and Understand Errors In Python.
- Python Common Syntax Errors.
- Indentation Error.
- Python Runtime Error.
- Zero Division Error.
- Searching On Stack Overflow.
- Operator Errors.
- Logical Errors.
- Python IndexError.
- Python ModuleNotFoundError.
- Python KeyError.
- Python ImportError
- Python ValueError
- Python KeyboardInterrupt

Exception Handling In Python

- Introduction to Exception Handling In Python.
- Raising An Exception In Python.
- Raising An AssertionError In Python.
- Handling Exceptions With Try & Except.
- The Else Clause.
- The Finally Clause

Working With Date & Time In Python

- Extract Day, Month and Year from a given Time.
- Extract Hours, Minutes, Seconds and Micro-seconds from a given Time.
- How To Update current Date.
- Working With TimeDelta in Python.
- Extract Week-Day From A Given Date.
- Generate Calendar.
- Format Date and Time.
- STRFTIME and STRPTIME.
- Extract The Year, Month, Day Time Using STRFTIME.
- How To Work With Timestamp.
- How to Convert Strings To DateTime Using STRPTIME.
- How To Handle Different Time Zones.
- Working with Date & Time in a Dataframe.
- Operations on Date & Time in a Pandas Dataframe.

Date & Time Exercises

Python Tips & Tricks

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LESSONS

Advanced Libraries

SciPy

Scikit-Learn

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Get Hands-On
With

Python Projects

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PYTHON PROJECTS

Hands-On

- **Linkedin Data Analysis with Python.**
  - Linkedin Connection **Timeline** Analysis with Python.
  - Linkedin Connections **Company** Analysis with Python.
  - Linkedin Connections **Position** Analysis with Python.

- **Facebook Data Analysis with Python.**
  - Analyze Your Facebook Data Live!!

- **Automate WhatsApp Messages with Python.**
  - Automate the way you send WhatsApp messages by scheduling messages to be sent automatically with Python.

- **Automate Facebook Messages with Python.**
  - Automate the way you chat using Facebook messenger by scheduling messages to be sent automatically with Python.

- **Create a Rolling Dice with Python GUI.**
  - create an interractive rolling dice with Tkinter(): Python Library for creating GUI's.

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Advanced

Hands-On With

Python Projects

(Web Scraping)

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PYTHON PROJECTS

Hands-On

- **Introduction to Web Scraping**
- **Web Scraping Libraries:**
  - **Requests**
  - **BeautifulSoup**
  - **Selenium**
  - **Scrapy**

- **Wikipedia Web Scraping with Python.**
  - use Python to scrape live data from Wikipedia for your projects.

- **Online Book Store Web Scrapping with Python.**
  - use Python to scrape live data from an Online Book Store and perform analysis on it all with Python and Web Scraping libraries.

- **Building Amazon Auto Scraper.**
  - use Python to build an auto web scraper that will scrape live data from Amazon.com each time you run the code and use it to perform data analysis or even build machine learnin model on it.

READY !!

Advanced Level

Machine Learning

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LESSONS

Supervised Machine learning

- Linear regression
  - linear regression project.
- Logistic regression
  - logistic regression project.
- Naive Bayes classifiers
- Multiple regression
- K-NN classification
  - **KNN project.**
- Support vector machines

Unsupervised Machine learning

- K-means clustering
- High-dimensional clustering.
- Hierarchical clustering

Unsupervised Machine learning Project

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FLASK

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FLASK

Flask Introduction

- What is Flask?
- Create your first Flask App
- Linking HTML File
- Linking CSS File

Flask and Machine Learning Deployment

- Introduction to Flask and Machine learning deployment
- Getting your dataset
- Exploratory Data Analysis
- Introduction to Pycharm
- Creating Folders
- Creating Folder Contents
- Getting your Model.pkl ready
- Final Flask Deployment

Flask and Machine learning Deployment Project.

CERTIFICATE UPON COMPLETION

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